



NOAA
FISHERIES

Teacher at Sea

NOAA's Teacher at Sea Program

2014 Year in Review

December 2014

NOAA's Teacher at Sea Program

2014 Year in Review

Overview

- 2014 NOAA Teacher at Sea Season By the Numbers
- Return on Investment
- Future Opportunities
- Background Material



"In the middle of nine people quickly hauling in countless sharpnose sharks, calling out data and moving around fishing gear, the female hammer-head rotated one of her eyes to look directly at me. At that moment I could feel/sense how people, the ocean and its inhabitants are all inextricably connected." – Lynn M. Kurth, 2014 TAS

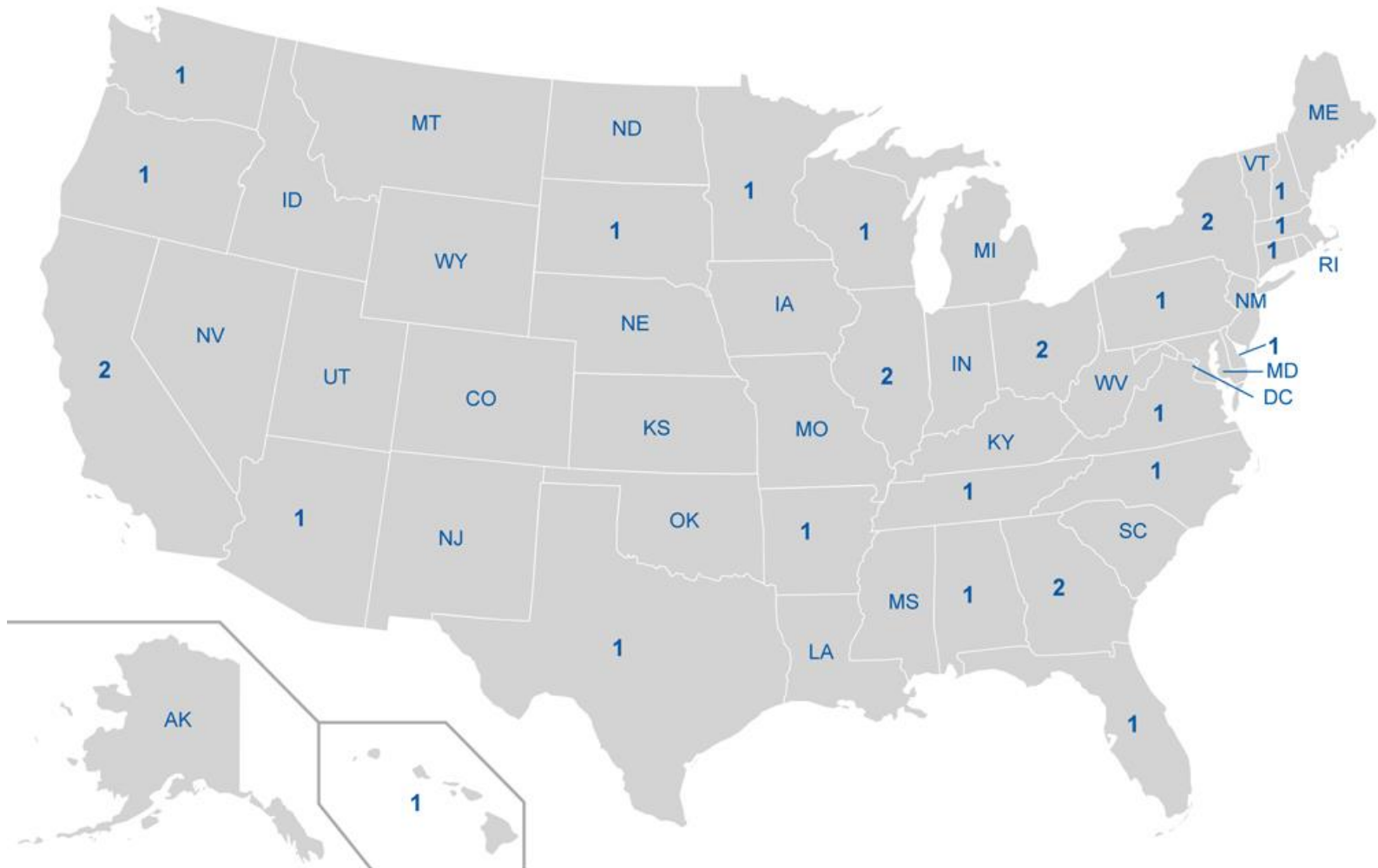
2014 By the Numbers



- Teachers sent to sea: 29
- Days at Sea: 417
- Research Hours: 5,004
- States represented: 24
- Active Alumni: 300+
- Outreach events: 25
- Science blogs: 161
- Graduate Credits Awarded: 21
- Teachers placed in labs & field: 2
- Media (articles, radio, TV): 55

"I feel very fortunate to have been chosen to be a NOAA Teacher at Sea. I have learned so much about fishery research and ocean floor mapping. I am happy to have played a small role in collecting this important data. I can't wait to share this knowledge with my students." – Kevin McMahon, 2014 TAS

2014 Teacher at Sea Class



2014 Return on Investment

Program Operations

- 29 teachers worked on NOAA Research cruises
- Teachers represented 24 states and every grade level Kindergarten through College
- Teachers worked with NOAA scientists a combined total of 417 days at sea, over 5,000 research hours
- 100% of the 2014 Teachers at Sea stated in the post-cruise survey:
 - They benefited from participating
 - They would recommend the program
 - They were very satisfied with their research experience



"Over the past couple of weeks, I have learned so much. My voyage on the Bering Sea is quickly coming to an end. The science team, NOAA Corps, and crew have been wonderful to work with during my time at sea. This has truly been an experience of a lifetime." – Mary Murrian, 2014 TAS

2014 Return on Investment

Web & Social Media Communication

Our 2014 Teachers at Sea contributed to...

- 100+ TAS-produced lesson plans online - searchable by topic, grade level, geographical region, and teacher
- 1,300+ easy-to-read science blogs online
- 14,000+ public photos

Our online following

- 360,000+ visitors to [Teacher at Sea Website](http://teacheratsea.noaa.gov)
- ~50% increase of [Facebook](#) likes
- ~30% increase of [Twitter](#) followers



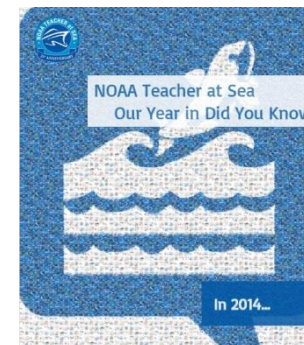
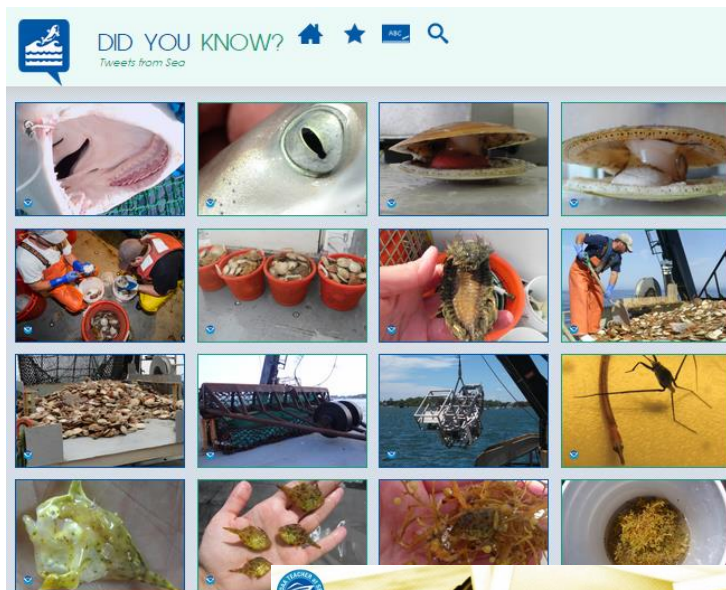
A constantly updated website that shares teacher experiences and tells stories across multiple platforms.

2014 Return on Investment



Web & Social Media Communications

- Launched "Favoriting" feature - allowing users to collect and share TAS educational resources more effectively
- Implemented creative social media and web campaigns to lead people to blogs and photos
 - Published 50 [Photos of the Week](#) – highlights NOAA research at sea
 - Added 30 new [“Did You Know”](#) educational products - interactive images and science content from blogs



[Top 10 Favorite Did You Know](#)



[Top 10 Favorite Photos of the Week](#)

2014 Return on Investment Teacher at Sea Alumni Association



Our 300+ active alumni stay involved long after their research cruise and in 2014 they responded to numerous requests from NOAA scientists and programs for support.

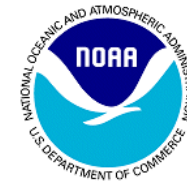


Meeting NOAA's Education and Outreach Needs in 2014 by...

- Presenting and working at 25 education conferences (with approximately 600,000 attendees) on behalf of NOAA.
- Being featured in 55 media posts (articles, TV, radio, web, etc.)
- Producing 70+ lesson plans, 50+ presentations, 1,000+ photos
- Distributing thousands of NOAA education products
- Weekly [Alumni Spotlights](#) online

TAS alumni, Frank Hubacz, Yaara Crane and Chris Peters present hands-on ocean related activities at the Smithsonian National Museum of Natural History "Scientist is In Event."

2014 Return on Investment Teacher at Sea Alumni Association



Meeting NOAA's Needs in the Regions by...

Creating Networks of Teacher at Sea Alumni to enhance their science content knowledge, learn about local NOAA data and resources, and support teacher and scientist partnerships to promote NOAA science in their communities.



Mid-Atlantic TAS Alumni learning about climate research project in Maryland.



New England TAS Alumni partner with NOAA scientists to hold a "NOAA Day" event.

Future Opportunities

- Expansion of program to include
 - Teacher in the Lab (pilot phase)
 - Teacher in the Field (pilot phase)
 - Teacher in the Air (pilot phase)
- Continue to leverage alumni network to expand reach beyond classrooms
- Continue to expand communication and outreach capabilities online
- Increase external partnerships



“To see these animals from the air is magnificent. You don’t get a sense of their size from a ship, where you might see a small part of the animal, but from the air you see so much more.”

– Ellen O’Donnell, TAS 2012 joined the NEFSC North Atlantic Right Whale survey team in June 2014.

Teachers' Perspectives...



"I have learned so much and will take back to my classroom a new excitement and love of the ocean. I will be able to introduce my students to what it means to be a scientist at sea and how what we learn in the classroom translates to what they can do in the future. "
– Emina Mesanovic, 2014 TAS (top)

"It is an amazing amount of sadness I feel, leaving this incredible ship with its incredible crew. Although my physical time on the ship is complete, I know the experience I've had will continue to inform my teaching and allow me to educate others about NOAA and the "what" and "why" of hydrographic surveying. "
– Laura Guertin, 2014 TAS (bottom)



Scientist's Perspective...



Jennifer Gatzke, NOAA Scientist

"It's useful for us as scientists to explain what we are doing and beneficial to have an audience for NOAA and for science. Teachers at Sea lend a fresh perspective to our work and a youthful approach to the research as it is being conducted. It was an absolute pleasure working with Kim [Gogan], and she was an energetic and effective member of our team."

- Jennifer Gatzke, Chief Scientist – *Gordon Gunter*

Student's Perspective...



"The One Who Got Away"

Artist Sydney Inouye painted, "The One Who Got Away" for the science crew of NOAA ship *Oscar Elton Sette*. Sydney is a 2014 graduate of Mid-Pacific Institute in Honolulu, HI and one of Dr. Suzanne Acord's (TAS, 2014) former students. She is very interested in squid and after learning about Dr. Acord's Teacher at Sea experience, Sydney painted a squid as a gift for the science crew. Dr. Don Kobayashi, NOAA Chief Scientist for this cruise received the artwork on behalf of the rest of the science team.

Background Material



“I have learned so much in these two short weeks, I want to stay and keep learning. I will take with me all that I have learned about the complexity of the ocean planet we live on and share my thirst to know more back to the classroom where we can continue our work.”
– Denise Harrington, 2014 TAS

2014 Teacher at Sea Class



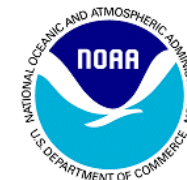
	Cruise Dates	Science	NOAA Office	Cruise Ports	Ship	First Name	Last Name	School State
1	03/17/14-03/28/14	Kona Integrated Ecosystem Assessment	NMFS/PIFSC	Honolulu, HI	<i>Oscar Elton Sette</i>	Suzanne	Acord	HI
2	04/07/14-04/28/14	AMAPPS & Turtle Abundance Leg 2	NMFS/NEFSC	Newport, RI; Woods Hole, MA	<i>Gordon Gunter</i>	Kimberly	Gogan	NH
3	04/21/14-04/30/14	GRNMS Ecomon Survey	NOS/ GRNMS	Savannah, GA; Charleston, SC	<i>Nancy Foster</i>	Jamie	Morris	FL
4	04/21/14-05/02/14	Hydrographic Survey	NOS/OCS	Newport, OR; Kodiak, AK	<i>Rainier</i>	Denise	Harrington	OR
5	05/06/14-05/16/14	Spring Bottom Trawl survey Leg 3	NMFS/NEFSC	Newport, RI; Bar Harbor, ME	<i>Henry B. Bigelow</i>	Chris	Henrickson	OH
6	05/07/14-05/22/14	ACUMEN	OAR/OE	Tampa, FL; North Kingston, RI	<i>Okeanos Explorer</i>	David	Murk	IL
7	05/27/14-06/11/15	SEAMAP Reef Fish Survey Leg 3	NMFS/SEFSC	Pascagoula, MS	<i>Pisces</i>	Spencer	Cody	SD
8	06/07/14-06/21/14	SEAMAP Summer Groundfish Leg 1	NMFS/SEFSC	Pascagoula, Ms; Galveston, TX	<i>Oregon II</i>	Carol	Schnaiter	IL
9	06/18/14-06/27/14	South Atlantic Marine Protected Area Survey	NMFS/SEFSC	Mayport, FL	<i>Nancy Foster</i>	John	Bilotta	MN

2014 Teacher at Sea Class



	Cruise Dates	Science	NOAA Office	Cruise Ports	Ship	First Name	Last Name	School State
10	06/18/14-07/03/14	Juvenile Rockfish Survey; Marine Mammal Excluder Device Testing	NMFS/NWFSC	Eureka, CA; Newport, OR	<i>R/V Ocean Starr</i>	Kainoa	Higgins	WA
11	06/23/14-07/03/14	Hydrographic Survey	NOS/OCS	Kodiak, AK; Seward, AK	<i>Fairweather</i>	Dana	Clark	TX
12	06/23/14-07/06/14	SEAMAP Summer Groundfish Leg 2	NMFS/SEFSC	Galveston, TX; Pascagoula, MS	<i>Oregon II</i>	Crystal	Davis	CA
13	07/04/14-07/22/14	Alaska Summer Pollock Survey Leg 2	NMFS/AKFSC	Dutch Harbor, AK	<i>Oscar Dyson</i>	Mary	Murrian	DE
14	07/05/14-07/14/14	Sea Scallop Survey Leg 3	NMFS/NEFSC	Woods Hole, MA	<i>Hugh R. Sharp</i>	Carol	Glor	NY
15	07/05/14-07/18/14	Southeast Fishery Independent Survey (SEFIS) Leg 1	NMFS/SEFSC	Morehead, NC	<i>Pisces</i>	Kevin	McMahon	GA
16	07/11/14-07/19/14	SEAMAP Summer Groundfish Leg 3	NMFS/SEFSC	Pascagoula, MS	<i>Oregon II</i>	Andi	Webb	NC

2014 Teacher at Sea Class



	Cruise Dates	Cruise	NOAA Office	Cruise Ports	Ship	First Name	Last Name	School State
17	07/16/14-07/24/14	Sanctuary Cruise - Applied CA Current Ecosystem Studies Cruise	NOS/Sanctuary	Bodega Bay, CA	<i>Fulmar</i>	Daniel	Rivera	CA
18	07/20/14-08/02/14	Southeast Fishery Independent Survey (SEFIS) Leg 2	NMFS/SEFSC	Morehead, NC	<i>Pisces</i>	Emina	Mesanovic	CT
19	07/26/14-08/09/14	Shark/Red Snapper Bottom Longline Leg 1	NMFS/SEFSC	Pascagoula, MS; Mayport, FL	<i>Oregon II</i>	Lynn	Kurth	WI
20	07/26/14-08/13/14	Alaska Summer Pollock Survey Leg 3	NMFS/AKFSC	Dutch Harbor, AK	<i>Oscar Dyson</i>	Kacey	Shaffer	OH
21	07/26/14-08/13/14	Alaska Summer Pollock Survey Leg 3	NMFS/AKFSC	Dutch Harbor, AK	<i>Oscar Dyson</i>	Gregory	Cook	MA
22	08/05/14-08/16/14	Deepwater Coral Habitat	NMFS/NEFSC	Newport, RI	<i>Henry B. Bigelow</i>	Joan	Le	VA
23	08/11/14-08/25/14	Shark/Red Snapper Bottom Longline Leg 2	NMFS/SEFSC	Mayport, FL; Pascagoula, MS;	<i>Oregon II</i>	Stephen	Tomasetti	NY

2014 Teacher at Sea Class



	Cruise Dates	Science	NOAA Office	Cruise Ports	Ship	First Name	Last Name	School State
24	08/18/14 - 09/05/14	Hydrographic Survey	NOS/OCS	Kodiak, AK; Seward, AK	<i>Rainier</i>	Cassie	Kautzer	AR
25	09/02/14-09/19/14	Hydrographic Survey	NOS/OCS	Norfolk, VA; Boston, MA	<i>Thomas Jefferson</i>	Laura	Guertin	PA
26	09/07/14-09/19/14	Autumn Bottom Trawl Survey Leg 1	NMFS/NEFSC	Newport, RI	<i>Henry B. Bigelow</i>	Sue	Zupko	AL
27	09/15/14-09/27/14	Florida Keys NMS	NOS/ONMS	Key West, FL	<i>Nancy Foster</i>	Amy	Orchard	AZ
28	09/23/14-10/03/14	Autumn Bottom Trawl Survey Leg 2	NMFS/NEFSC	Newport, RI	<i>Henry B. Bigelow</i>	Janelle	Harrier-Wilson	GA
29	10/06/14 - 10/17/14	Hydrographic Survey	NOS/OCS	Kodiak, AK	<i>Rainier</i>	Lauren	Wilmoth	TN



NOAA Teacher at Sea Program Goals

Short-term Goals (Skills and Knowledge)

Teachers will:

- Understand how NOAA oceanic and atmospheric research is linked to National Education Science Standards and Ocean Literacy Principles.
- Understand the education and training paths that lead to NOAA-related careers.

Mid-term Goals (Behavior and Action)

Teachers will:

- Use NOAA data and resources in classroom activities.
- Use NOAA-related career information in classroom activities, when mentoring students and when working with colleagues.

Long-term Goals (Social, Environmental, and Economic)

In support of NOAA's mission, the Teacher at Sea Program will:

- Build an understanding of earth system science among teachers and students.
- Build a workforce for science, technology, engineering, and math careers.

Note: Goals were created using the Bennett Logic Model. External evaluation data indicates we are meeting our Short- and Mid-term Goals, and beginning to meet long-term goal.



Program Operations

Call for Applications (September)

- Call for applications takes place from 09/01-09/30
- Eligible candidates include full-time kindergarten through college level teachers, as well as museum and aquaria educators
- Receive an average 200 applications per year

Selections (November - December)

- Applications reviewed by a panel of 60+ TAS alumni and NOAA employees
- Reviews follow rubric
- Number of participants determined by budget, but usually around 25
- Final selections approved by NMFS Deputy Assistant Administrator and applicants notified by December

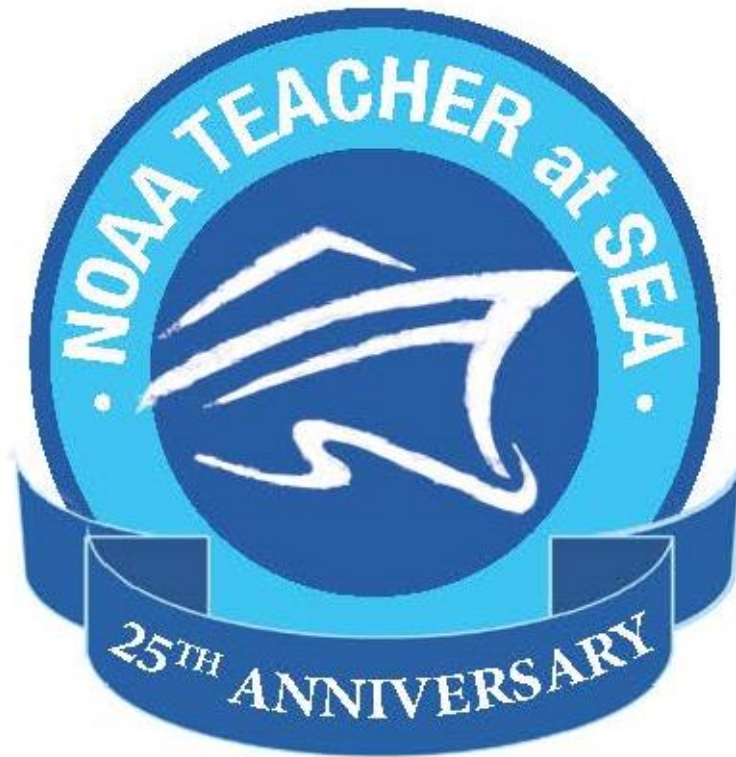


Operations (continued)

Placement Process (February – November)

- Ship Placement – Teachers matched with cruise based on availability, research interests, and geographical preferences
- Training – Teachers must complete online training course prior to sailing
- Deliverables – Teachers must agree to a Statement of Work prior to sailing which includes posting blogs, photos, lessons, and presentations online
- Travel – Program funds and arranges for participants (at least one month before cruise)
- Frequent On-going Communication
 - With teacher
 - With scientist
 - With ship XO

NOAA's Teacher at Sea Program 2015 Marks Our 25th Anniversary



**Highlighting 25 years of teachers working side-by-side
with NOAA scientists on real-world research**